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|-------------------------------|------------------------|---------------------|--|
| <b>Notice of Allowability</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                               | 10/646,927             | CHEN ET AL.         |  |
|                               | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                               | Kianni C. Kaveh        | 2883                |  |


-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--  
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1. ☒ This communication is responsive to 4/28/05 & 7/6/05.
  - 2. ☒ The allowed claim(s) is/are 1-16,21 and 22.
  - 3. ☒ The drawings filed on 28 April 2005 are accepted by the Examiner.
  - 4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    - 1. ☐ Certified copies of the priority documents have been received.
    - 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

- 5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  - 6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

- Attachment(s)**
- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                 | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

  
Kianni C. Kaveh      Au 2883

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Applicant's canceling of claims 17-20 in the amendment/response submitted on 4/28/05 is acknowledged.

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with MR. Troxell on July 6, 2005 in order to make the case allowed.

Please cancel claim 23

### ***Reason for Allowance***

Claims 1-16 and 21-22 are allowed for the following reasons:

The instant application is deemed to be directed to a nonobvious improvement over the invention patented in Pat. No. Mao et al. (US 2004/0223204).

Claims 1-16 are allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the set of suspended springs has a thickness that is less than a thickness of each of the set of movable comb finger electrodes and the set of stationary comb finger electrodes in a perpendicular out-of-plane direction to said substrate of the device in combination with the rest of the

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limitations of the base claim. Claims depend on claim and therefore they are also allowed.

Claim 21 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the grip structure formed on the substrate of said micro-optical device to clamp said shuttle beam is via the friction force forming at the contact interface of the clamped location between grip structure and shuttle beam; thereby said micro-optical device maintains its status at certain states in an analog controllable manner without electrical power consumption when said clip type latch is used to clamp said shuttle beam in combination with the rest of the limitations of the base claim.

Claim 22 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the grip structure formed on the substrate of said micro-optical device to clamp said shuttle beam is via the electrostatic; force forming between the gap between two side electrodes of grip structure when the two electrodes attract to each other, and come to contact with shuttle beam, where the electrodes of grip arm are coated with insulating materials and isolated from the shuttle beam; thereby said micro-optical device maintains its status at certain states in an analog controllable manner without electrical power consumption when said clip type latch is used to clamp said shuttle beam in combination with the rest of the limitations of the base claim

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

**Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872-9306 (for formal communications intended for entry)

**or:**

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



K. Cyrus Kianni  
Patent Examiner *(Cyrus)*  
Group Art Unit 2883

July 7, 2005